

Schedule Workshop 5

"Kinematic Aspects of Robotics"

April 29 - May 3, 2024

Organizer: Andreas Müller, Zijia Li, Josef Schicho

	Monday April 29	Tuesday April 30	Wednesday May 1 <i>PUBLIC HOLIDAY</i>	Thursday May 2	Friday May 3
09:00 - 10:00	Registration & Introduction	Josef Schicho Explanations for Paradoxical Mobility	Jon Selig The Geometry of the Adjoint Representation of $SE(3)$	Sylvain Calinon Geometric representations for robot manipulation skills acquisition	Marco Carricato Persistent Submanifolds of the Special Euclidean group $SE(3)$
10:00 - 11:00	Xianwen Kong Reconfiguration analysis and type synthesis of multi-mode parallel mechanisms	Zijia Li Kinematic Singularities of Robot Chains	Peter Donelan What can algebraic invariants tell us about robot kinematics	Maria Alberich Carramiñana & Franco Coltraro Modelling inextensible textiles by geometrical constraints tailored to robotic manipulation	Abhilash Nayak Configuration space analysis of mechanisms using tropical geometry
11:00 - 11:30	<i>Coffee Break</i>	<i>Coffee Break</i>	<i>Coffee Break</i>	<i>Coffee Break</i>	<i>Coffee Break</i>
11:30 - 12:30	Manfred Husty On two open kinematic problems	Mark Plecnik The Purposeful Placement of Singularities	Jean-Pierre Merlet Tools for non polynomial kinematics: interval analysis, continuation and neural networks	Pablo Lopez-Custodio Intrinsic on-manifold trajectory learning for robotics	Andreas Mueller Lie Bracketing for Investigating Singularities of holonomic and nonholonomic Robots
12:30 - 14:00	<i>Lunch Break</i>	<i>Lunch Break</i>	<i>Lunch Break</i>	<i>Lunch Break</i>	Wrap up session & Good-bye
14:00 - 15:00	Charles Wampler Finding overconstrained mechanisms via fiber products	Durgesh Salunkhe Cuspidal robots: geometrical analysis and issues in path planning of 6R cobots		Alba Perez Gracia 3D Shape characterization using superquadrics	
15:00 - 15:30	<i>Coffee Break</i>	<i>Coffee Break</i>		<i>Coffee Break</i>	
15:30 - 16:30	Georg Nawratil A global approach for the redefinition of higher-order flexibility and rigidity	Participant presentations	15:30 - 17:00 <i>Lentos Art Gallery</i>	Mike McCarthy Quaternions in Kinematics	
	16:30 <i>Reception</i>		18:30 <i>Dinner at Restaurant Klosterhof</i>	<i>(Participant presentations)</i>	